and would be a worthwhile purchase for those individuals and departments doing a lot of sophisticated renal scintigraphy.

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AGE-RELATED FACTORS IN RADIONUCLIDE METABOLISM AND DOSIMETRY.

This book is the proceedings of a workshop on "Age-related Factors in Radionuclide Metabolism and Dosimetry", sponsored by the Commission of the European Communities and the Commissariat a l'Energie Atomique and held in Angers, France, November 26–28, 1986.

The metabolic models primarily used for calculating absorbed radiation doses have been developed from studies on adult humans or experiments on adult animals. As noted in the preface of this book, the application of these models to predict doses to the general public is complicated by the fact that the population contains embryos, fetuses, infants and children whose metabolism may differ greatly from that of adults. This workshop was held to provide data to remedy this situation.

The proceedings of this workshop include information on gastrointestinal uptake and inhalation pathways of radionuclides in infants and children and on the metabolism of radionuclides in developing bone, thyroid and other organs. Many papers report results of studies pertaining to age-related changes in the metabolism of metals and heavy elements such as plutonium, americium, and neptunium.

Although the book has no index to help the reader find specific information, the 45 papers are grouped according to subject matter. The first seven papers concern gastrointestinal absorption as a function of age, including suggested revisions to the ICRP model of the passage of material through the GI tract. The next five papers provide information about respiratory function and inhalation pathways in infants and children. Aerosol deposition in adults and children is also compared. The review of dosimetric lung models by James and Roy discusses the dose from domestic exposure to radon.

Nine papers pertain to metabolism of various bone-seeking materials and includes a review of ossification and mineral metabolism in children. Information about distribution and retention of radium in subjects under study at Argonne National Laboratory is presented in a few papers. Of potential interest for calculating radiation doses from monoclonal antibodies is a paper by Priest that describes an age-related model for the dosimetry of alpha-emitting, bone surface-seeking radionuclides.

Nine papers give data on metabolism of specific radionuclides at various ages. Included in this collection are papers on radioiodine, tungsten-178, and metabolism and risks from tritium and carbon-14. The next three papers deal with approaches to age-dependent modeling for dose estimation.

The next 11 papers are concerned with radiation dose estimation for the embryo/fetus. Three review papers are included: "Physiology of Transfer" by Wegst; "Placental Transfer of the Actinides and Related Heavy Metals" by Sikov; and "Placental Transfer of Other Radionuclides" by Steive. Two papers in this group describe mathematical models of the pregnant woman, one at three-months and one at nine months. One paper compares the effectiveness of $^{131}$I and $^{125}$I in producing developmental changes in mice. The remaining papers in this group provide data on the dose from specific radionuclides at different gestational ages.

The next paper by Kaul and Roedler is a discussion of problems associated with the use of ICRP models for estimating doses and dose equivalents for the general population. The book ends with a summary of a panel discussion that follows up on the implications of Kaul and Roedler's paper and identifies areas for future research.

Because the book was produced directly from camera-ready copy provided by the authors, the type varies somewhat throughout but the overall appearance is not displeasing. Figures are clear and generally of good quality. As might be expected, the styles of the authors differ. All papers are in English but the fact that English is not the primary language for many authors does not appear to be a major problem.

The information presented at this workshop and included in this book is of most interest to people engaged in radiation protection; however, others who are interested in fetal transfer of materials and in metabolism as a function of age will find the book useful. The review papers, in particular, are informative, concise, and well-written.

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Books Received


